

REMARKS

Claims 1-30 are currently pending in the subject application and are presently under consideration.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1, 5, 6, 18, 21 and 24 Under 35 U.S.C. §102(e)

Claims 1, 5, 6, 18, 21 and 24 stand rejected under 35 U.S.C. §102(e) as being anticipated by Tirkkonen et al. (2004/0132494). It was alleged that Tirkkonen teaches all of the limitations of these claims, including “encoding both first and second nominally orthogonal polarization signals with a same long code”. Applicants respectfully disagree with the characterization of the Tirkkonen reference.

Tirkkonen teaches a system and method of “transmitting common pilot channels transmitted by the first and second antennas 10 and 12 use the same spreading code but the pilot symbols transmitted by the primary common pilot channels are orthogonal to one another” (Tirkkonen, paragraph 0027). Thus, although Tirkkonen teaches the use of orthogonal pilot channels using the same spreading code, it does not teach Applicants’ feature of encoding a first and second nominally *orthogonal polarization signals* with a same long code. There is no mention whatsoever of using orthogonal *polarization* in Tirkkonen, i.e., the direction in which the electrical field of an electro-magnetic field propagates. An example of polarization includes left and right polarization of two transmission signals. Tirkkonen, in fact, fails to teach the use of polarization at all. Thus, Tirkkonen cannot anticipate Applicants independent claims, specifically claims 1 and 21. Further, Applicants believe that all claims dependent on these claims are allowable as being dependent on what Applicants believe are allowable claims.

II. Rejection of Claims 2-4, 9-11, 22, 23, 27 and 28 Under 35 U.S.C. §103(a)

Claims 2-4, 9-11, 22, 23, 27 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tirkkonen et al. (2004/0132494) in view of Yuan (2005/0243896). It was alleged that the combination of Tirkkonen and Yuan teaches all of the features of Applicants’ claims.

Regarding claims 2-4, 9-11, 22, and 23, Applicants believe these claims are allowable as being dependent on allowable claims, namely claims 1 and 21, as discussed above.

With regard to claims 27 and 28, it was alleged that Tirkkonen teaches all of the elements of these claims, except that Tirkkonen fails to explicitly disclose applying respective plural mutually distinct Walsh codes in each sub-channel. It was further alleged that Yuan discloses applying respective plural mutually distinct Walsh codes in each sub-channel and that it would have been obvious for one skilled in the art to modify Tirkkonen's method by applying Walsh codes to each channel.

Applicants note that these claims depend on claim 26, which comprises the feature of "means for applying the same long code to the received encoded first and second nominally orthogonal polarization signals". Again, as discussed above, Tirkkonen fails to teach the use of *orthogonal polarization* anywhere in the specification. Applicants use *orthogonal polarization* as opposed to code or symbols being orthogonal to each other. Likewise, Yuan also fails to teach the use of orthogonal polarization.

Yuan teaches a receiver that allows sharing of at least one spreading code amongst two or more wireless units. The relative phase difference between two or more wireless is measured, relying on spatial diversity. The wireless units are then "grouped together" to provide minimal mutual interference. The term "minimal mutual interference" is defined as the "quasi-orthogonality of the phase of a channel in use by a wireless unit relative to the phase of the channel in use by a second wireless unit" (Yuan, paragraph 0015). Thus, although Yuan teaches the use of orthogonality with respect to signal phase, it does not teach the use of orthogonal polarization, i.e., the direction in which the electrical field of an electro-magnetic field propagates. Since neither Tirkkonen nor Yuan teaches the use of orthogonal polarization, these two references, alone or in combination with each other, cannot obviate claim 26 and, therefore, claims 27 and 28, which depend therefrom.

III. Rejection of Claims 7, 8, 12-17, 19, 20, 25, 26, 29 and 30 Under 35 U.S.C. §103(a)

Claims 7, 8, 12-17, 19, 20, 25, 26, 29 and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tirkkonen et al. (2004/0132494).

Regarding claims 7 and 25, it was alleged that Tirkkonen teaches a communication method including the transmission method of claim 1, but that Tirkkonen fails to explicitly disclose: at the destination, receiving the encoded first and second nominally orthogonal polarization signals; and applying the same long code to the received encoded first and second nominally orthogonal polarization signals received at the destination. It was further alleged that Tirkkonen discloses transmitting the coded signals to a receiver, the receiver being aware of the codes it should receive and effectively carries out the process of retrieving the original signal in paragraph 28 of Tirkkonen, and in view of this, it would have been obvious to one skilled in the art to perform the above process in order to recover the signal originally transmitted.

Applicants do not believe that Tirkkonen teaches the method of claim 1 and the system of claim 21, as discussed above in Section I with respect to the rejection to claims 1 and 21 under §102(e). Claims 7 and 25 depend on these claims, respectively. Therefore, in light of that discussion, Applicants believe that claims 7 and 25 is allowable as being dependent on allowable claims.

Further, Applicants do not believe that a prima facie case of obviousness has been presented. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Here, Applicants believe that the statement "Tirkkonen discloses transmitting the coded signals to a receiver, the receiver being aware of the codes it should receive and effectively carries out the process of retrieving the original signal" is conclusory. Applicant respectfully requests that a reference be provided to support the quoted statement; otherwise, the rejection to claims 7 and 25 should be withdrawn.

Even if one were to support this statement, *arguendo*, it is not enough to obviate Applicants claims because the statement does not consider the application of long codes on two *nominally orthogonal polarization signals*. Therefore, even if one were to combine Tirkkonen with knowledge generally known in the art, not all of Applicants' claim features have been presented. Accordingly, the rejection under obviousness with respect to claims 7 and 25 should be withdrawn.

Regarding claims 8, 13, 26, and 29, it was alleged that Tirkkonen teaches a method of modulating first and second nominally orthogonal polarization signals that were transmitted from respective first and second transmission sources after having been encoded with a same long code in paragraph 27. It was further alleged that Tirkkonen fails to teach a method of demodulating first and second nominally orthogonal polarization signals, but that Tirkkonen does disclose transmitting the coded signals to a receiver, the receiver being aware of the codes it should receive and effectively carries out the process of retrieving the original signal in paragraph 28 of Tirkkonen. In view of this, it was further alleged that it would have been obvious to one skilled in the art to perform the above process in order to recover the signal originally transmitted.

First, Applicants do not believe that Tirkkonen teaches the method of independent claim 8 or the system of independent claim 26, because Tirkkonen does not teach “receiving two *nominally orthogonal polarization signals* and applying the same long code to the two nominally orthogonal polarization signals” as claimed by Applicants. Again, as discussed above, orthogonal polarization signals are not the same as orthogonally encoded data, as Tirkkonen discloses. Tirkkonen simply does not teach or suggest the use of orthogonal polarization signals. Therefore, in light of that discussion, Applicants believe that claims 8 and 26 are allowable because Tirkkonen fails to teach each element of Applicants’ claims, and the rejection should be withdrawn.

Second, with regard to claims 8 and 26, Applicants do not believe that a *prima facie* case of obviousness has been presented. The Federal Circuit has stated that “rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). Here, Applicants believe that the statement “Tirkkonen discloses transmitting the coded signals to a receiver, the receiver being aware of the codes it should receive and effectively carries out the process of retrieving the original signal” is conclusory. Applicant respectfully requests that a reference be provided to support the quoted statement; otherwise, the rejection to claims 8 and 26 should be withdrawn.

Even if one were to support this statement, *arguendo*, it is not enough to obviate Applicants' claims because the statement does not consider the application of long codes on two received nominally orthogonal polarization signals. Therefore, even if one were to combine Tirkkonen with knowledge generally known in the art, not all of Applicants' claim features have been presented. Accordingly, the rejection under obviousness with respect to claims 8 and 26 should be withdrawn.

Based on the above discussion, Applicants further believe that claims 13 and 29 are allowable as being dependent on allowable claims.

With further regard to claims 13 and 29, Applicants do not believe that Tirkkonen teaches the method of claim 13 or the system of claim 29 because Tirkkonen fails to teach the encoding of two nominally orthogonal polarization signals with a same long code. As discussed above with respect to the rejection of claim 1 and 21, while Tirkkonen teaches the use of orthogonal pilot channels using the same spreading code, it does not teach Applicants' feature of encoding a first and second nominally *orthogonal polarization signals* with a same long code. There is no mention whatsoever of using *orthogonal polarization* in Tirkkonen, i.e., the direction in which the electrical field of an electro-magnetic field propagates. An example of polarization includes left and right polarization of two transmission signals. Tirkkonen, in fact, fails to teach the use of polarization at all. On this basis alone, the rejection to these claims should be withdrawn.

Regarding claims 12, 14-17, 19, 20, and 30, each was rejected as being obvious over Tirkkonen. Each of these claims is dependent on a claim that Applicants believe is allowable, as discussed above. Therefore, these claims are allowable as being dependent upon claim that Applicants believe to be allowable, and the rejection should be withdrawn.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [QUALP825US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

/Himanshu S. Amin/

Himanshu S. Amin

Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731